Embedding agroecology's soil care principle in the urbanised society: the case of Flanders

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Abstract

In recent years, challenges such as climate change adaptation and dealing with the biodiversity crisis have drawn the attention of the urbanised society on the importance of soil stewardship. We believe agroecological farmers and food growers could play an important role, as the care for living soils is a fundamental principle in agroecology. However, current urbanisation dynamics deeply affect this potential. In the context of the food disabling city (Tornaghi, 2017), living soils are actively destroyed, and soil care is not mandatory, not common, nor structurally valued or supported. To overcome this deadlock, we need to (re)value the metabolic agency of agroecological practices within dynamics of urbanisation.

In this paper, we examine to what extent soil care is embedded in the regulation of land use and soil use in Flanders (Belgium). We use an agroecological farmers perspective to think beyond the residual embedding of soil care, and to begin to re-politicise the soil issue. We develop a critique of the post-political nature of existing policies and recent attempts to put the soil issue back on the agenda. Our analysis shows that the attention for soil care in the regulation of land and soil use in Flanders is limited, fragmented and not coherent. We conclude that urbanism and food planning can play an important role in enabling soil care, but this will require active engagement in the re-politicisation of soils. We make the case that such politicising work could start by giving a voice to agroecological farmers and food growers within soil policy arenas.

Valuing the metabolic agency of farmers

Urban societies face a number of socio-environmental challenges that cannot be solved solely within the urban fabric. These challenges, such as climate change adaptation, dealing with the biodiversity crisis, or making our food production ecologically sustainable and socially just, inherently impose a set of tasks on the unbuilt space, urban fringe and countryside. In recent years, **urban planners discovered the farmer as an interesting agent to address** for implementing and maintaining a variety of answers to these challenges, putting the farmer in charge of various societal services besides food production, such as renewable energy production, maintenance of cultural heritage landscapes, water management, carbon capture and storage in soils, the protection of endangered species or biodiversity at large, etc.

Such lists of what the farmer could do for the urban society **contrast sharply with the food-disabling character of current western urbanisation processes** (Tornaghi, 2017). From a historical perspective, urbanisation has always been inextricably bound up with taking care of the structural dependence on food for the hungry city (Steel, 2008). This involvement in the food question has been gradually evacuated from the urban sphere, finding the ground for the cheap and massive supply of food within the extractive exploitation of a colonial geography. Following Friedman and McMichael (Friedmann, 1987; Friedmann & McMichael, 1989; McMichael, 2008, 2013) we can retrace how the regulation of food became part of a global order in which the food question became a national and supranational question, and would only to a very limited extent be treated as an urban matter of concern in the global north. The global food regime makes urbanisation in the global north a process centred on the organisation of food consumption but less and less concerned with the care for food production. Consequently, urbanisation systematically destroys the conditions and resources needed for food growing, causes an ongoing displacement of localised food growing practices, disempowers local knowledge ecologies, and structurally fails to value the role of farmers and farm practices. In the context of such food-disabling urbanisation processes, **responsibilising farmers to tackle vast, societal challenges without re-evaluating contemporary urbanisation methods is unfair and perverse**. To overcome this deadlock, we are convinced that it is necessary to (re)value the metabolic agency of food growing within dynamics of urbanisation.

The ongoing research project 'Urbanising in Place' (UIP), in which three of the authors are involved[38], starts from the assumption that agroecological farmers and food growers can be metabolic agents. However, we immediately tagged a second assumption onto it: this requires a radically different model of urbanisation. The project is a participative effort to build and empower the concept of an 'agroecological urbanism' (C.M. Deh-Tor, 2017, 2018) with communities of practice in Rosario, London, Riga and Brussels. We seek, proceeding from a normative research starting point, to implement the principles and practices of political agroecology in a new paradigm for urbanisation which places food, metabolic cycles and an ethics of land stewardship, equality and solidarity at its core. We try to conceive of the societal embedding of agroecology in an urban society, in the socio-ecological processes that construct the city (Heynen, Kaika, & Swyngedouw, 2006).

Soil care in the food-disabling city

Soil care is a clear illustration of this situation. Many authors have described how civilisations historically have tried to develop a sustainable relation to soils and soil fertility to ensure social reproduction (Bardgett, 2016; Dale & Carter, 1955; Hillel, 1991; Hyams, 1952; McNeill & Winiwarter, 2006). This quest for "intelligent soil parasitism", as Hyams called it (1952, p. 42), generated a **rich history of landscape ecologies, collective arrangements, strategies and infrastructure to protect, increase and reproduce soil fertility**. In Belgium, the history of the urban manure systems and the historical organisation of agricultural tenancies are good examples of how urbanised/urbanising societies actively resourced soil fertility to safeguard social reproduction (Vandermaelen, 2019). However, after the breakthrough of a global, industrial-colonial food regime, **western urban societies became anything but a good soil steward**. The historical, locally embedded arrangements to reproduce soil fertility disappeared. The dismantling of the urban manure systems and the fact that the attention for soil care in the historical organisation of agricultural tenancies didn't survive the establishment of the first Belgian agricultural tenancies act in 1929 are cases in point. These arrangements were replaced by a capitalistic system with a very extractive character (Smil, 2013), lacking a long term perspective from a soil ecology

[38] http://urbanisinginplace.org

perspective. The energetic deficit of the industrial food system, consuming more energy (fossil energy input) then what is being produced (food energy output) is a clear example of this extractive dynamic (Visser, 2013). In 2015, the FAO rang the alarm bell with a report on the 'status of the world's soil resources' (FAO & ITPS, 2015). **Current urbanisation processes are considered by the FAO as the greatest threat to soil functions in Europe**.

This situation contrasts sharply with the fundamental attention for soil care in agroecology. **Agroecological practices actively seek to care for soils**. Agroecologists consider soils as a living entity (Balfour, 1943; Gobat et al., 2004) and agriculture as a continuous exercise in teaming with reproductive processes and conditions in the ecological system of soils (Lowenfels, 2013, 2017; Lowenfels & Lewis, 2010). Soil care and the use of the precautionary principle are fundamental in this approach (Puig de la Bellacasa, 2017). However, **in the context of the food disabling city, teaming with soil life is not obvious**. Agroecological farmers work in a context in which the care for living soils is not mandatory, not common, nor structurally valued or supported. Several aspects of the agroecological practice, such as composting, making long term investments in natural soil capital, harvesting nutrients from ecological succession, or using crop rotation strategies to avoid soil depletion, **conflict with characteristics of contemporary urbanisation processes**. Dynamics such as a very problematic access to land, the absence of collective infrastructure for the agroecological food system, or policies that impede food production and nutrient recycling in the urban tissue, turns the agroecological ambition to care for soils into a struggle. Addressing these farmers for the management of vast societal, urban challenges is not serious in a context of the status quo.

Embedding agroecology's soil care principle

We believe urbanism and (food) planning can play an important role in enabling agroecological practices, and thereby enabling the agroecological use of living soils. However, given the limited involvement of urbanism and planning in the urban food question during the past 200 years, the recipes are not yet for the asking. This is why our research is developed in close relation with the agroecological community. After the identification of soil care as a fundamental principle of agroecological practice, and the observation that current urbanisation processes do not account for soil care, we want to study this current state of affairs in depth.

In this paper, **we examine to what extent soil care is embedded in the regulation of land use and soil use in Flanders (Belgium)**. The historical precedents enable us to develop a language of residualisation. We therefore start from the hypothesis that there is currently not very much in place to account for soil care. We **use an agroecological farmers perspective to think beyond the residual embedding of soil care, and to begin to re-politicise the soil issue**. Kenis and Lievens (2015) identified three "moments" in a profound re-politicisation of the present: 1) a moment of critique of post-political representations of the present, 2) a moment of subversion to disrupt existing ways of seeing/hearing/doing and opening space for alternative practices, and 3) a moment of construction whereby alternative ideas, demands and projects are developed and brought together in a counter-hegemonic discourse (pp. 142-143). The main aim of this paper is to contribute to the first moment, **criticising the post-political representations and nature of both existing policies and recent attempts to put the soil issue back on the agenda.**

For this analysis, we screened the existing institutional landscape for policies that touch upon the principle of soil care. There are of course many forms of regulation that indirectly affect soil, but the number of practices that explicitly regulate soil is rather limited. At this moment, our analysis is focussed on OVAM (agency of the Flemish government responsible for waste management and soil sanitation), VLM (Flemish land agency), VLACO (Flemish association of governments and companies around composting), the manure agency (embedded in VLM), the regional erosion policies, and the Environment department of the Flemish government. Recently,

there are some initiatives that try to put the soil issue back on the agenda. From a political point of view, the plea for the development of a soil certificate system is the most interesting to analyse. We questioned these existing policies and initiatives from an agroecological, soil care perspective. Leading questions are:

- Are these policies reactive or proactive (precautionary principle)?
- Are soils and soil fertility considered as a static or dynamic given? What to think of these policies from a more than human perspective (Haraway, 2016; Puig de la Bellacasa, 2017)?
- Do these policies enable or disable the agroecological farmers' pursuit for soil care?

Conclusions

Our analysis shows that the **attention for soil care in the regulation of land and soil use in Flanders is limited, fragmented and not coherent**. One cannot speak of an embedding of soil care as such, but rather of a range of policies that touch upon soil. This involves (very) different paradigms from which these policy aspects originate. Policies related to composting for example are strongly associated with a waste management paradigm, the regulation of manure essentially seeks to reduce or avoid environmental pollution, most erosion policies are very reactive and associated measures often aim to reduce nuisance rather than to prevent soil loss. The **post-political representations of these policies are normalised**, disregarding the disabling effect of several policies for agroecological practices and leaving opportunities for enabling them unvalued. **Planners involvement's in the soil issue are strongly based on the assumption that soil fertility is a static given, a physical characteristic of the soil**. This results for example in attempts to protect, 'once and for all', the fertile soils by excluding certain developments. Even though excluding certain developments is of course essential, this doesn't necessarily mean that soil fertility is safeguarded. As soil fertility is a dynamic given, the actual use of soils and the care for soils within that use still matters. Excluding certain developments is only a partial contribution to enable (agroecological) farmers to care for soils. Pleas to allocate specific soils to specific agricultural practices are also rather common in the planning community. However, a lack of agricultural knowledge, post-political representations of what is proposed, and a lack of tools to establish such land use dynamics make this impracticable. We conclude urbanism and food planning can play an important role, but this will **require a more enabling method of working, an active contribution to the repoliticisation of soils. Giving more centrality to principles of soil care could start by giving voice to the food growers and farmers as caretakers of the soil.** This requires hard work to translate some of the agroecological principles of soil care and soil health in such a manner that they could structurally inform the work of policy making around soil.

References

Balfour, E. B. (1943). *The living soil*.

Bardgett, R. D. (2016). *Earth matters: how soil underlies civilization*. Oxford: Oxford University Press.

C.M. Deh-Tor. (2017). From Agriculture in the City to an Agroecological Urbanism: The transformative pathway of urban (political) agroecology. *Urban Agriculture Magazine, 33,* 8-10.

C.M. Deh-Tor. (2018). Commoning voor een agroecologische stedenbouw. In A. Kuhk, D. Holemans, & P. Van den broeck (Eds.), *Op grond van samenwerking*. Antwerpen: EPO.

Dale, T., & Carter, V. G. (1955). *Topsoil and civilization*. Norman: University of Oklahoma Press.

FAO, & ITPS. (2015). Status of the World's Soil Resources: Main Report. Retrieved from www.fao.org/3/a-i5199e.pdf

Friedmann, H. (1987). International regimes of food and agriculture since 1870. In T. Shanin (Ed.), *Peasants and Peasant Societies* (Revised edition ed., pp. 258-276). Oxford: Basil Blackwell.

Friedmann, H., & McMichael, P. (1989). Agriculture: The rise and decline of national agricultures, 1870 to the present. *Sociologia Ruralis, 29*(2), 93-117.

Gobat, J.-M., Aragno, M., & Matthey, W. (2004). *The living soil: fundamentals of soil science and soil biology*. Enfield: Science Publishers.

Haraway, D. J. (2016). *Staying with the Trouble: Making Kin in the Chthulucene*. Durham: Duke University Press.

Heynen, N., Kaika, M., & Swyngedouw, E. (Eds.). (2006). *In the Nature of Cities: Urban Political Ecology and The Politics of Urban Metabolism*. Abingdon: Routledge.

Hillel, D. (1991). *Out of the earth: civilization and the life of the soil*. Berkeley: University of California Press.

Hyams, E. (1952). *Soil and civilization*. London: Thames and Hudson.

Kenis, A., & Lievens, M. (2015). *The Limits of the Green Economy: From re-inventing capitalism to re-politicising the present*. Abingdon / New York: Routledge.

Lowenfels, J. (2013). *Teaming with nutrients: the organic gardener's guide to optimizing plant nutrition*. Portland: Timber Press.

Lowenfels, J. (2017). *Teaming with fungi: the organic grower's guide to mycorrhizae*. Portland: Timber Press.

Lowenfels, J., & Lewis, W. (2010). *Teaming with microbes: a gardener's guide to the soil food web* (Revised ed.). Portland: Timber Press.

McMichael, P. (2008). Food sovereignty, social reproduction and the agrarian question. In A. H. Akram-Lodhi & C. Kay (Eds.), *Peasants and globalization: political economy, agrarian transformation and development*. New York: Routledge.

McMichael, P. (2013). *Food Regimes and Agrarian Questions*. Practical Action Publishing: Fernwood Publishing.

McNeill, J. R., & Winiwarter, V. (Eds.). (2006). *Soils and societies: perspectives from environmental history*. Isle of Harris: White Horse Press.

Puig de la Bellacasa, M. (2017). *Matters of care: speculative ethics in more than human worlds*. Minneapolis; London: University of Minnesota Press.

Smil, V. (2013). *Harvesting the biosphere: what we have taken from nature*. Cambridge, Mass.: MIT Press.

Steel, C. (2008). *Hungry city: how food shapes our lives*. New York: Random House.

Tornaghi, C. (2017). Urban Agriculture in the Food-Disabling City: (Re)defining Urban Food Justice, Reimagining a Politics of Empowerment. *Antipode, 49*(3), 781-801. doi:10.1111/anti.12291

Vandermaelen, H. (2019). Urban manure systems and the historical articulation of the urban nutrient question. *OASE, 104*.

Visser, M. (2013). Revisiting Ester Boserup: the agroecology of agrarian change under population pressure. In J.-P. Van Ypersele & M. Hudon (Eds.), *1er Congrès interdisciplinaire du développement durable, Namur: Quelle transition pour nos sociétés? Thème 2: Alimentation, Agriculture, Élevage* (pp. 141-149). Namur: ULB, UCL & Wallonie.